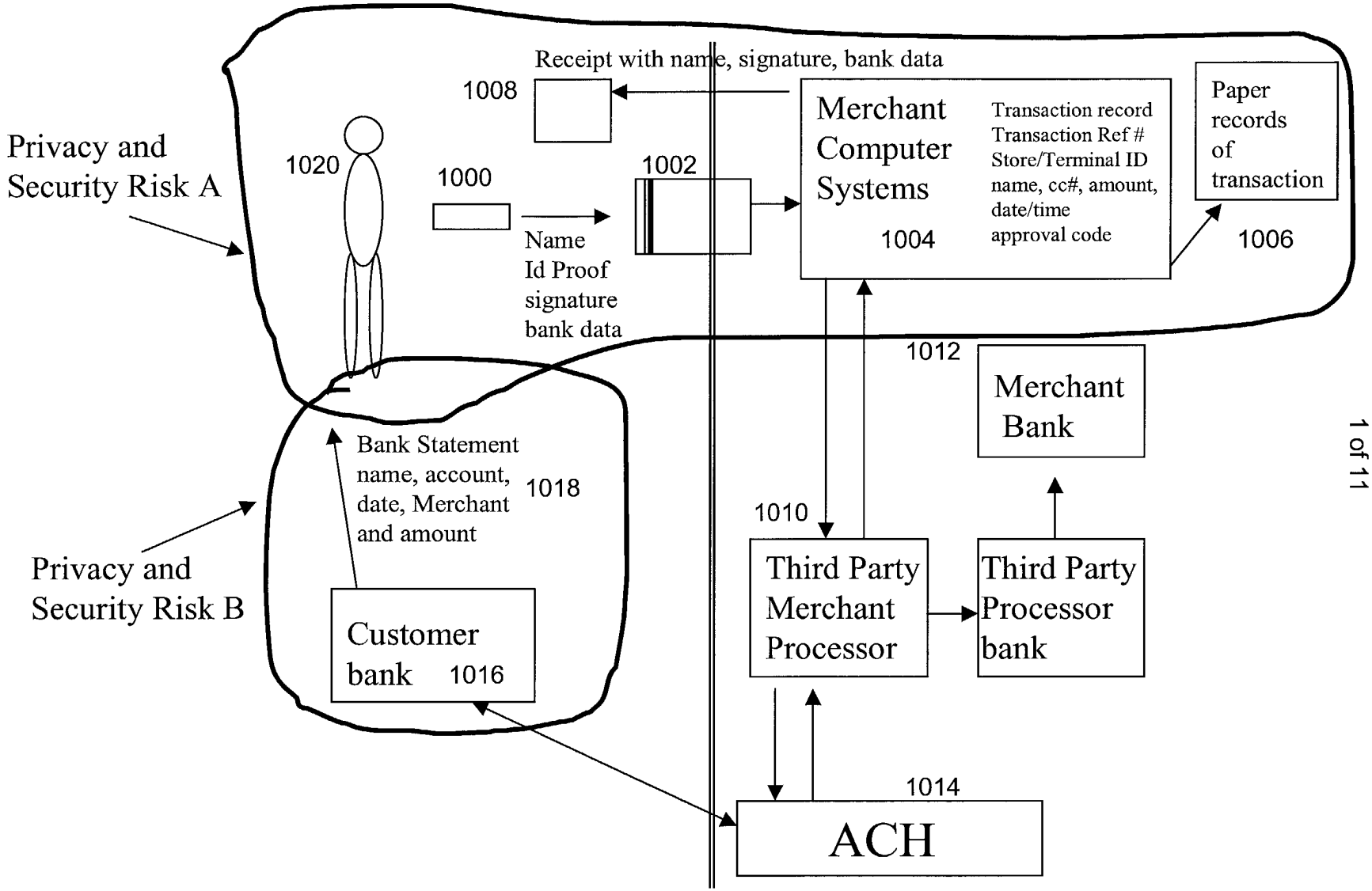
Privacy and Security Risk A
Receipt with name, signature, bank data
1008
1020
1000
1002
Merchant Computer Systems
1004
Transaction record
Transaction Ref #
Store/Terminal ID
name, cc#, amount, date/time
approval code
Paper records of transaction
1006
Name
Id Proof
signature
bank data
1012
Merchant Bank
Bank Statement
name, account, date, Merchant and amount
1018
1010
Privacy and Security Risk B
Third Party Merchant Processor
Third Party Processor bank
Customer bank 1016
1014
ACH

FIGURE 1

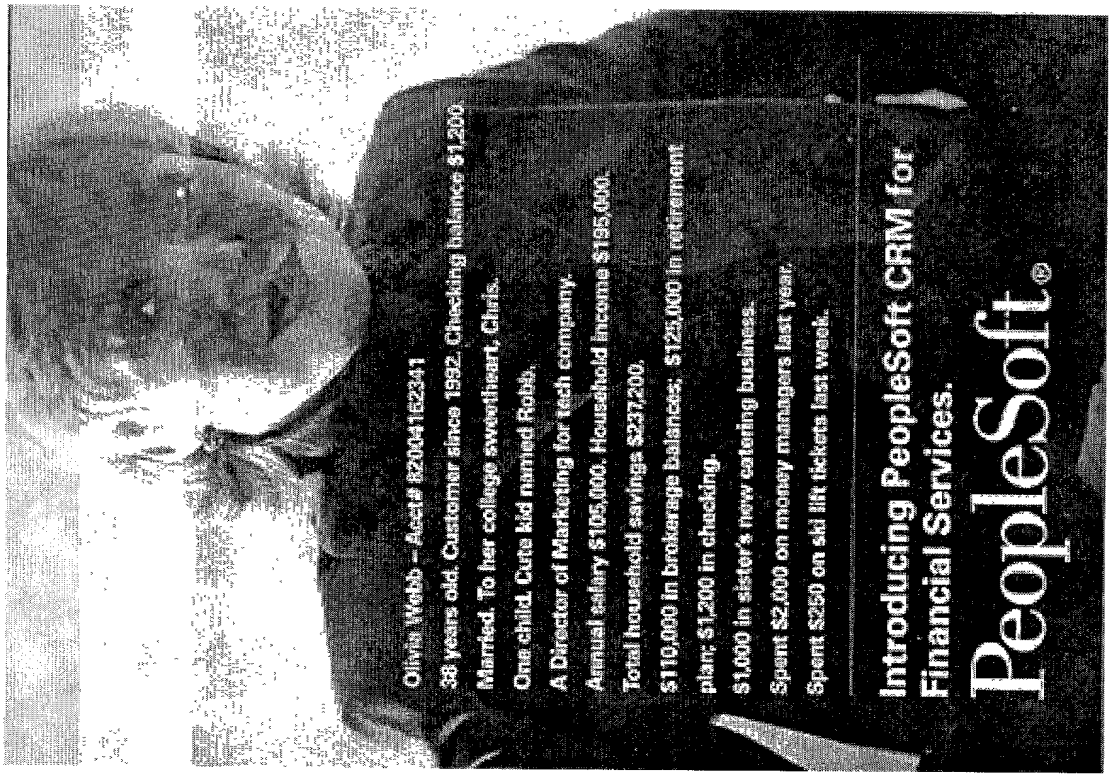
Olivia Webb – Acct# 82004162341
38 years old. Customer since 1992. Checking balance $1,200.
Married. To her college sweetheart, Chris.
One child. Cute kid named Robb.
A Director of Marketing for tech company.
Annual salary $105,000. Household income $195,000.
Total household savings $237,200.
$110,000 in brokerage balances; $125,000 in retirement
plan; $1,200 in checking.
$1,000 in sister's new catering business.
Spent $2,000 on money managers last year.
Spent $350 on ski lift tickets last week.
Introducing PeopleSoft CRM for Financial Services.
PeopleSoft®
1024
1022

FIGURE 2

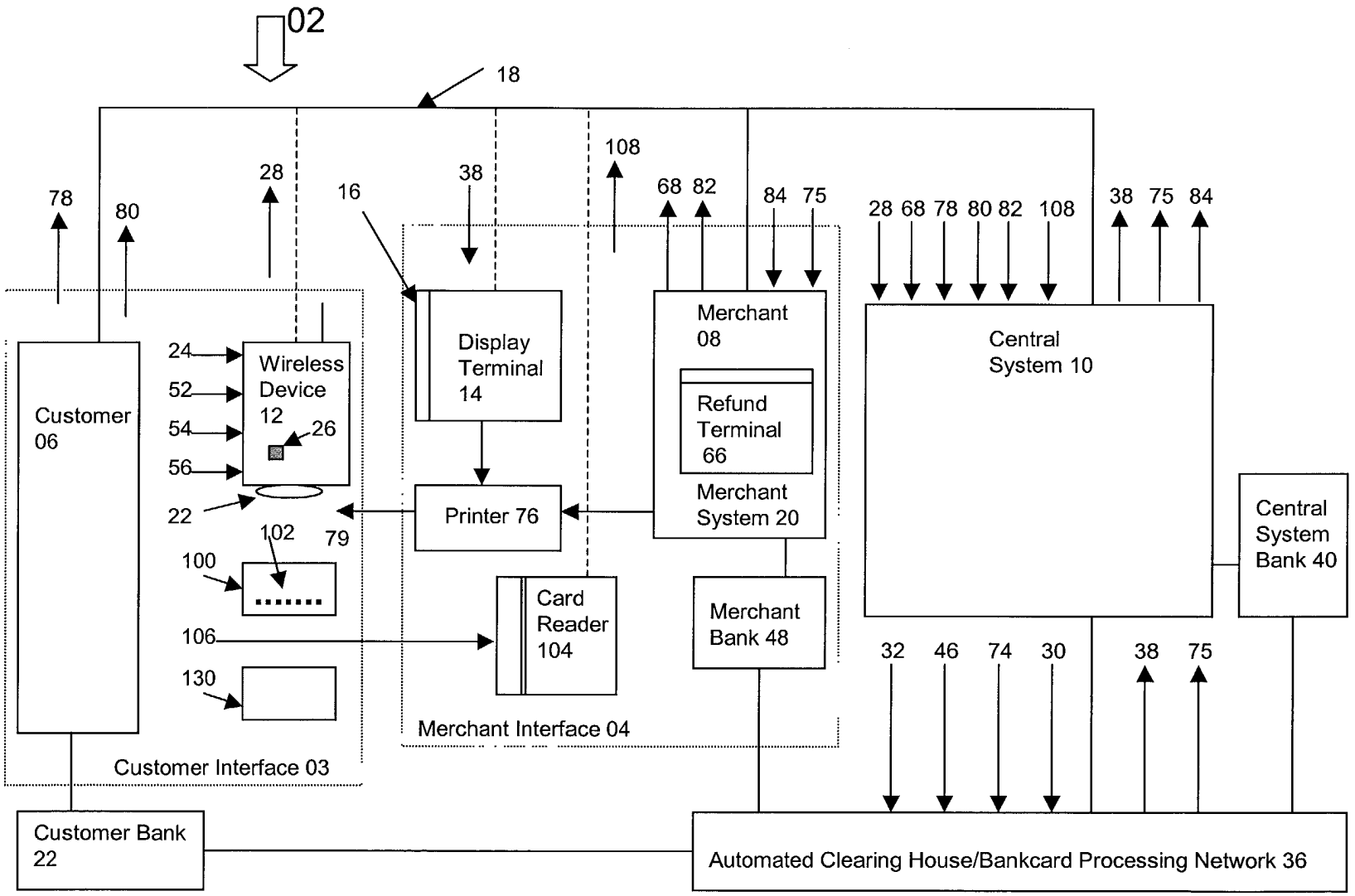
02
18
78
80
28
16
38
108
68 82
84 75
28 68 78 80 82 108
38 75 84
Customer 06
24
52
54
56
22
Wireless Device 12
26
102
79
100
106
130
Display Terminal 14
Printer 76
Card Reader 104
Merchant 08
Refund Terminal 66
Merchant System 20
Merchant Bank 48
Central System 10
Central System Bank 40
32 46 74 30
38 75
Merchant Interface 04
Customer Interface 03
Customer Bank 22
Automated Clearing House/Bankcard Processing Network 36

FIGURE 3

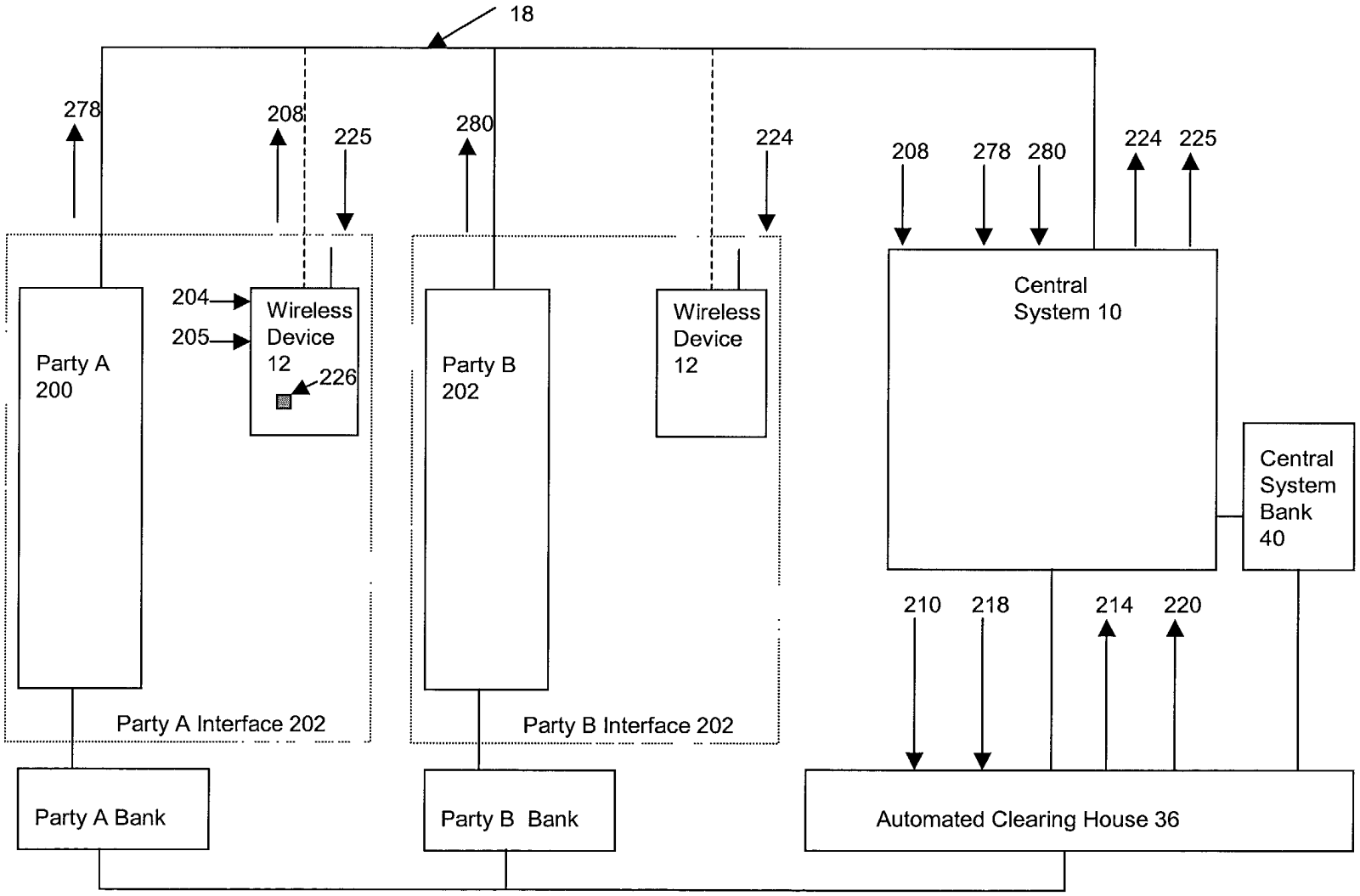
18
278
208
225
280
224
208
278
280
224
225
204
205
Wireless Device 12
226
Party A 200
Party B 202
Wireless Device 12
Central System 10
Central System Bank 40
210
218
214
220
Party A Interface 202
Party B Interface 202
Party A Bank
Party B Bank
Automated Clearing House 36

FIGURE 4

20STTO" hE89h00T

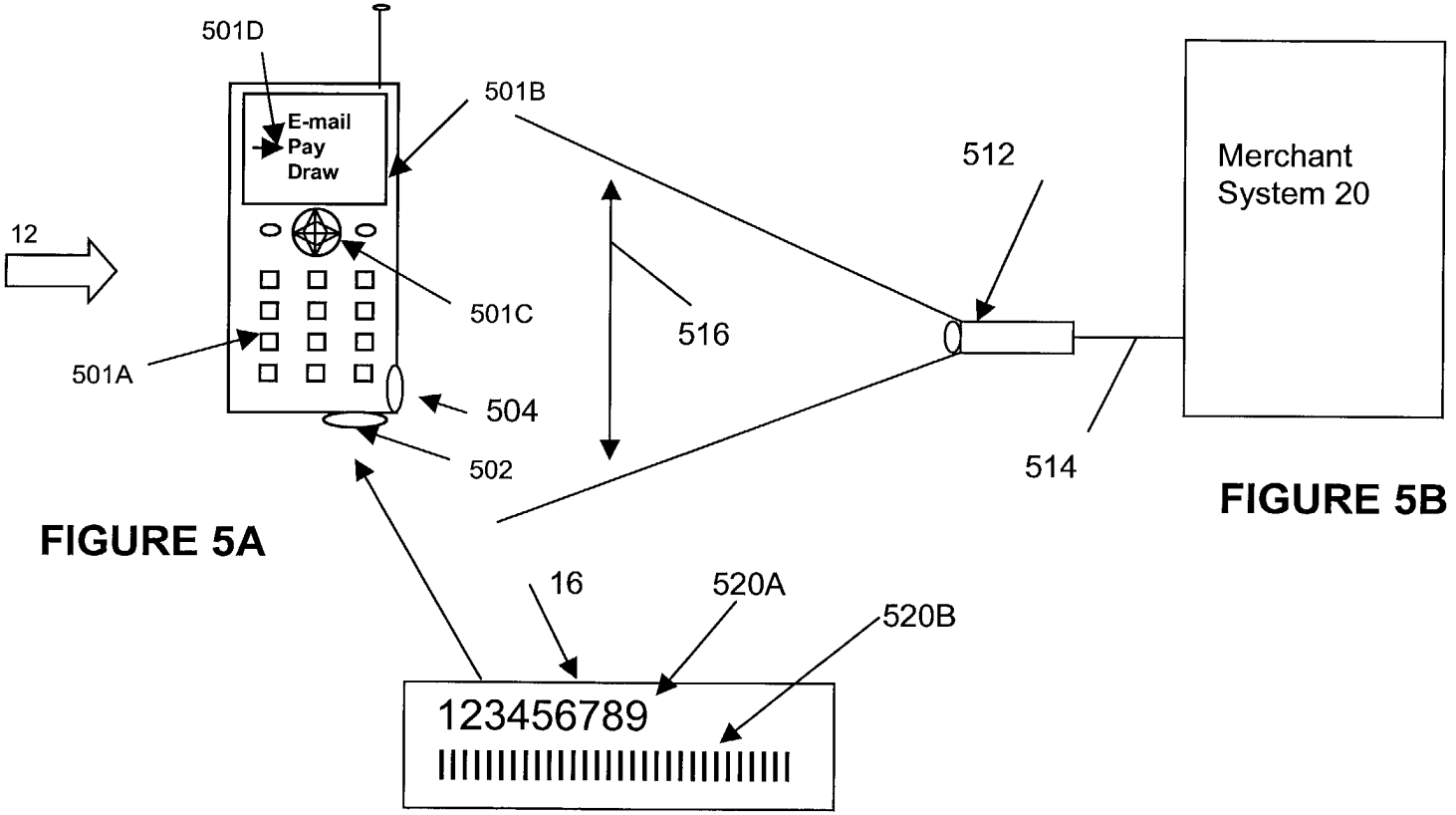

FIGURE 5A

FIGURE 5B

FIGURE 5C

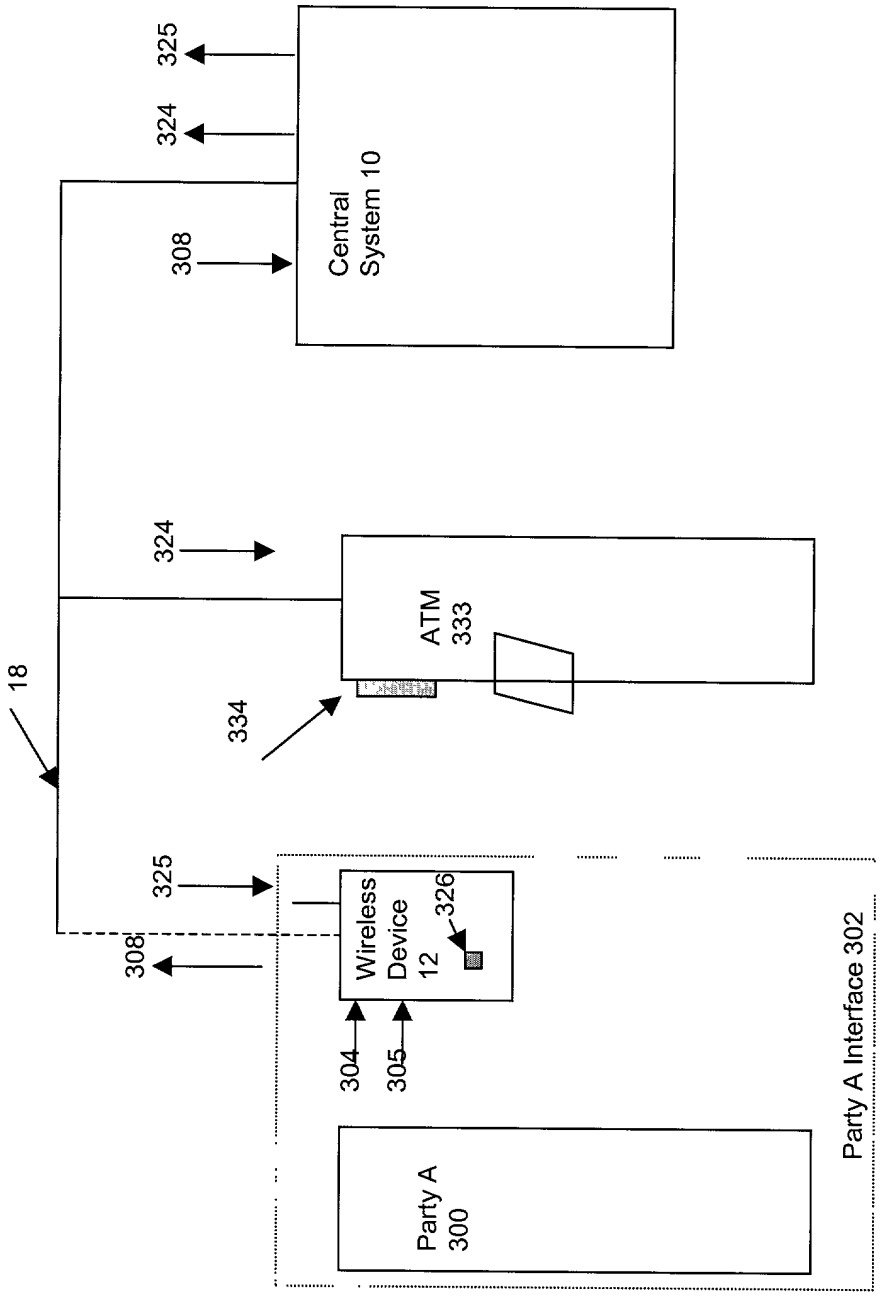
325
324
Central System 10
308
324
ATM 333
334
18
325
Wireless Device 12
326
308
304
305
Party A 300
Party A Interface 302

FIGURE 6

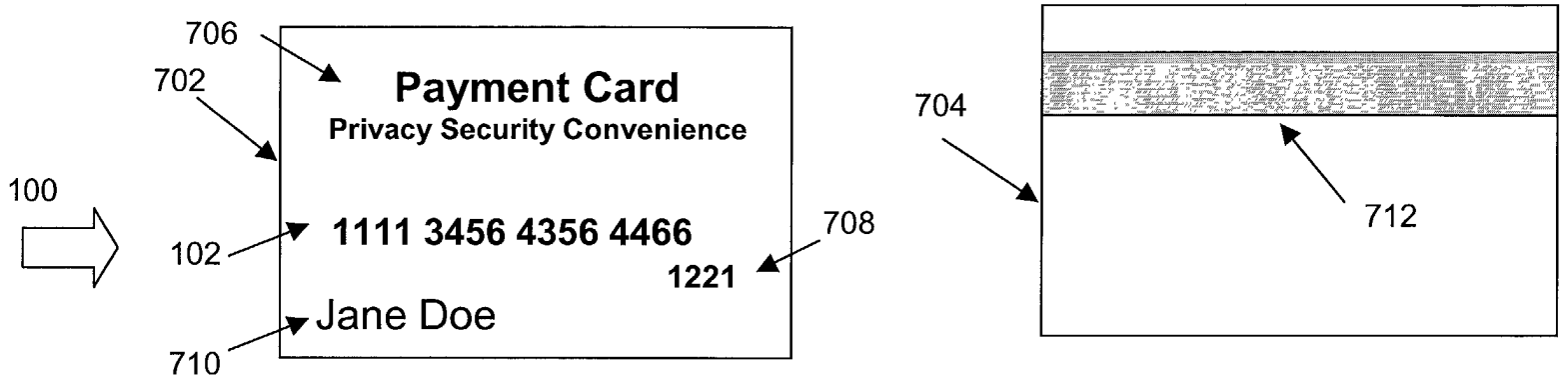

FIGURE 7A

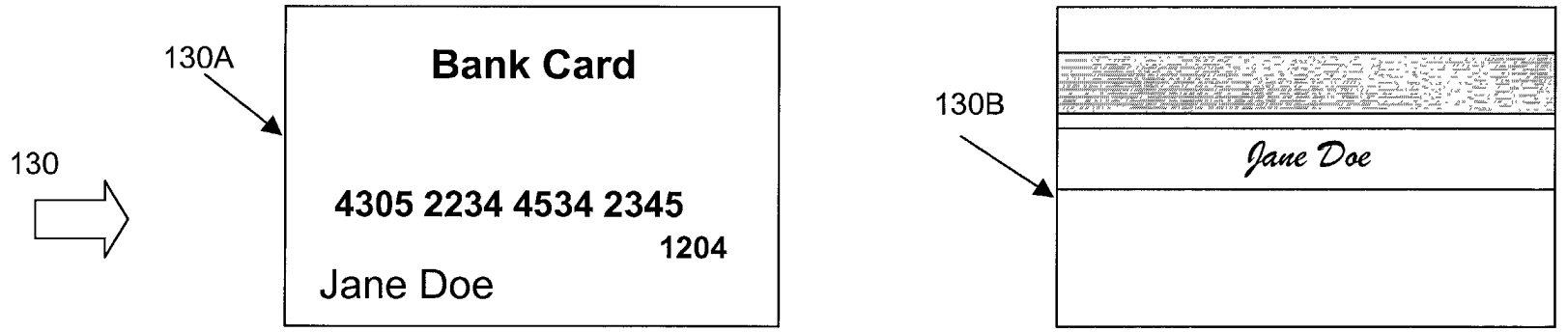

FIGURE 7B

Receive payment card data (16 digit card Number, 4 digit date, CPIN) **720**

Parse 16 digit card number into four sub-sets as 1-4digit, 2-4digit, 3-4digit, 4-4digit
And using the 4 digit date read corresponding offsets from Table A 732 **722**

Apply the four offsets to the four 4-digits numbers as follows: **724**
New First-4 digit = First-4 digits plus offset1
New Second-4 digit = Second-4 digits plus offset2
New Third-4 digit = Third-4 digits plus offset3
New Fourth-4 digits = Fourth-4 digits plus offset 4

Customer id 854 = Combination of (New First-4digits, New Second- 4digits,
New Third- 4digits, New Fourth-4digits) **726**

Using customer id 854 and CPIN 856 Read database 838B
To find Actual Bankcard number data 858 **728**

Table A 732

Date 708:	**Offsets 760**
1221	3 3 4 5
1222	4 5 6 7

FIGURE 7C

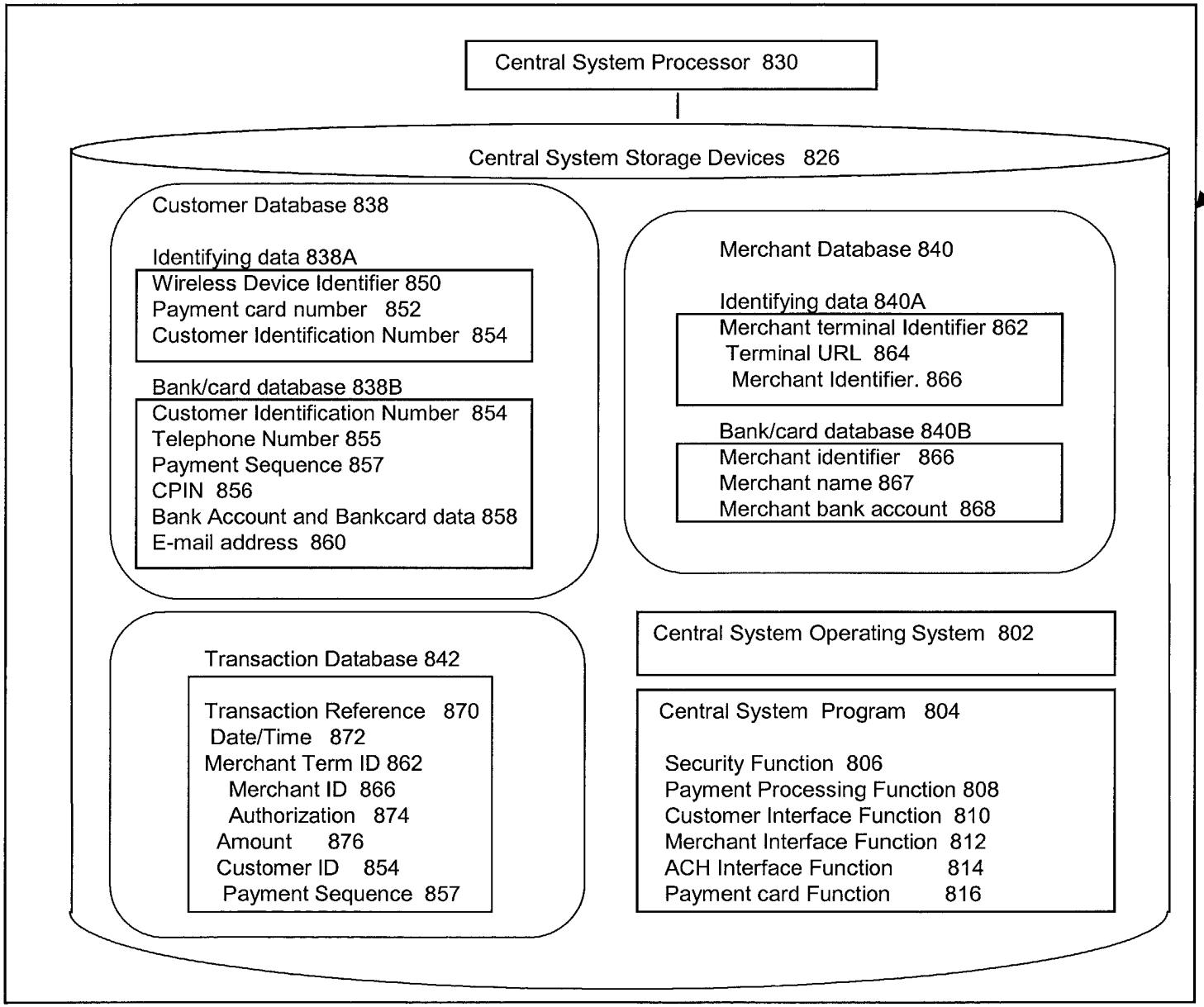
Central System Processor 830
Central System Storage Devices 826
Central System 10
Customer Database 838
Identifying data 838A
Wireless Device Identifier 850
Payment card number 852
Customer Identification Number 854
Bank/card database 838B
Customer Identification Number 854
Telephone Number 855
Payment Sequence 857
CPIN 856
Bank Account and Bankcard data 858
E-mail address 860
Merchant Database 840
Identifying data 840A
Merchant terminal Identifier 862
Terminal URL 864
Merchant Identifier. 866
Bank/card database 840B
Merchant identifier 866
Merchant name 867
Merchant bank account 868
Transaction Database 842
Transaction Reference 870
Date/Time 872
Merchant Term ID 862
Merchant ID 866
Authorization 874
Amount 876
Customer ID 854
Payment Sequence 857
Central System Operating System 802
Central System Program 804
Security Function 806
Payment Processing Function 808
Customer Interface Function 810
Merchant Interface Function 812
ACH Interface Function 814
Payment card Function 816

FIGURE 8

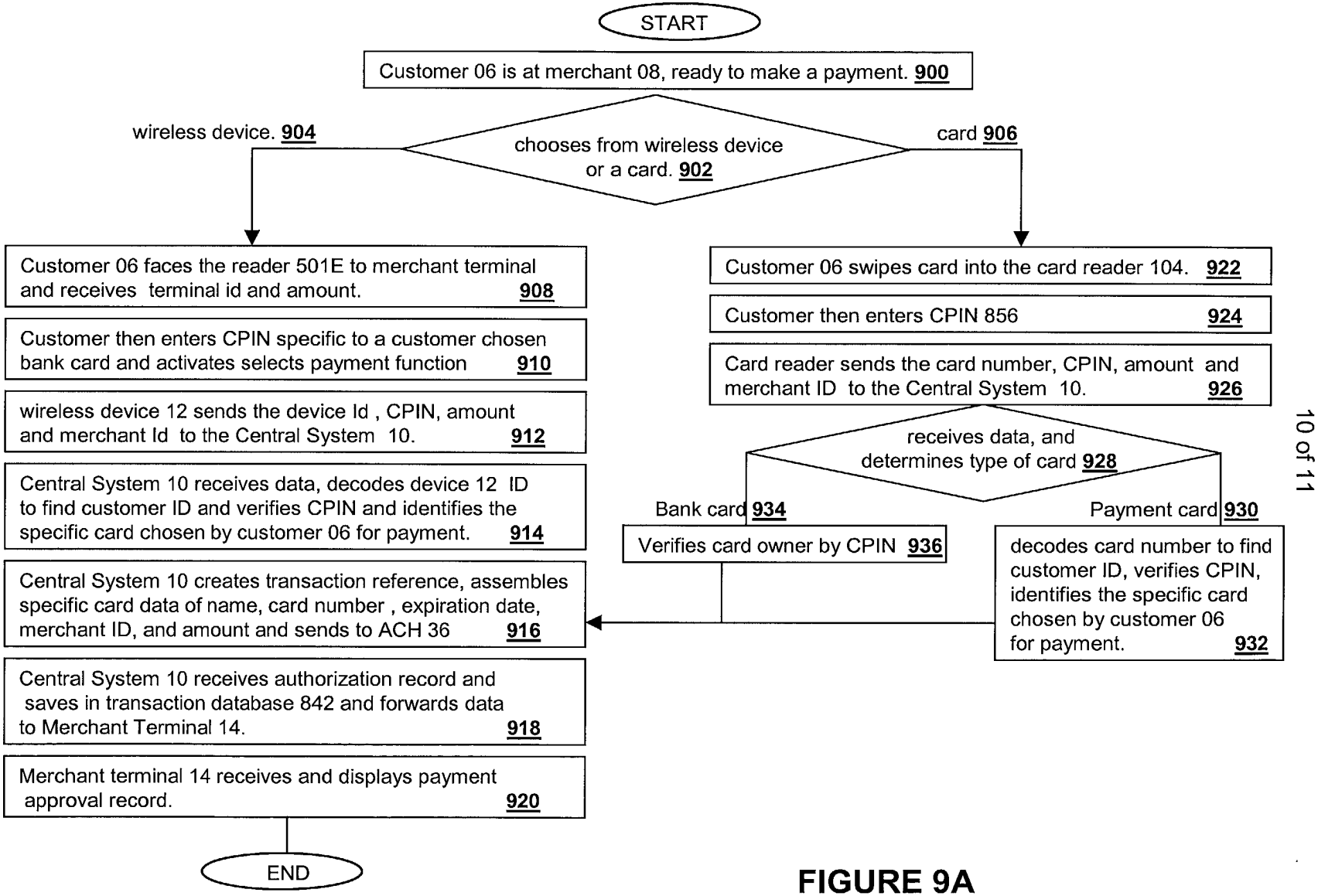
START
Customer 06 is at merchant 08, ready to make a payment. 900
chooses from wireless device or a card. 902
wireless device. 904
card 906
Customer 06 faces the reader 501E to merchant terminal and receives terminal id and amount. 908
Customer then enters CPIN specific to a customer chosen bank card and activates selects payment function 910
wireless device 12 sends the device Id , CPIN, amount and merchant Id to the Central System 10. 912
Central System 10 receives data, decodes device 12 ID to find customer ID and verifies CPIN and identifies the specific card chosen by customer 06 for payment. 914
Central System 10 creates transaction reference, assembles specific card data of name, card number , expiration date, merchant ID, and amount and sends to ACH 36 916
Central System 10 receives authorization record and saves in transaction database 842 and forwards data to Merchant Terminal 14. 918
Merchant terminal 14 receives and displays payment approval record. 920
END
Customer 06 swipes card into the card reader 104. 922
Customer then enters CPIN 856 924
Card reader sends the card number, CPIN, amount and merchant ID to the Central System 10. 926
receives data, and determines type of card 928
Bank card 934
Payment card 930
Verifies card owner by CPIN 936
decodes card number to find customer ID, verifies CPIN, identifies the specific card chosen by customer 06 for payment. 932

FIGURE 9A

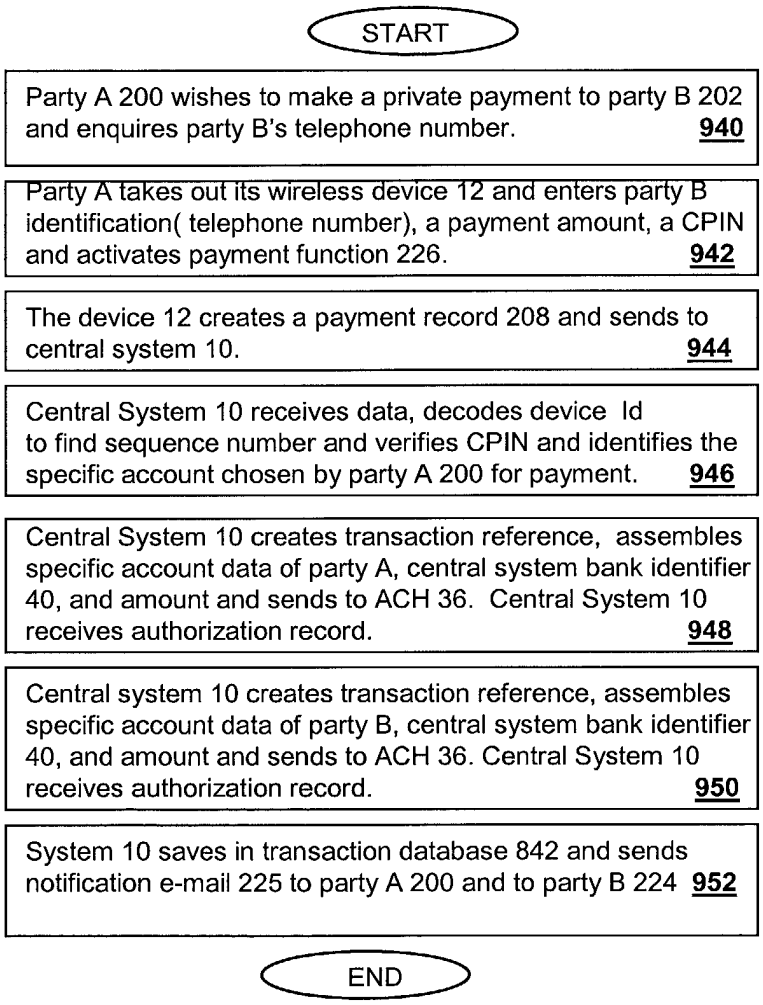
START
Party A 200 wishes to make a private payment to party B 202 and enquires party B's telephone number. 940
Party A takes out its wireless device 12 and enters party B identification(telephone number), a payment amount, a CPIN and activates payment function 226. 942
The device 12 creates a payment record 208 and sends to central system 10. 944
Central System 10 receives data, decodes device Id to find sequence number and verifies CPIN and identifies the specific account chosen by party A 200 for payment. 946
Central System 10 creates transaction reference, assembles specific account data of party A, central system bank identifier 40, and amount and sends to ACH 36. Central System 10 receives authorization record. 948
Central system 10 creates transaction reference, assembles specific account data of party B, central system bank identifier 40, and amount and sends to ACH 36. Central System 10 receives authorization record. 950
System 10 saves in transaction database 842 and sends notification e-mail 225 to party A 200 and to party B 224 952
END

FIGURE 9B